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Hunts

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(54) **TOWEL WARMER**

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(51) **Int. Cl.**[7] **F27D 7/04**; F26B 9/06
(52) **U.S. Cl.** **219/400**; 219/385; 219/386
(58) **Field of Search** 219/385, 386, 219/400, 507–510; 392/379–385

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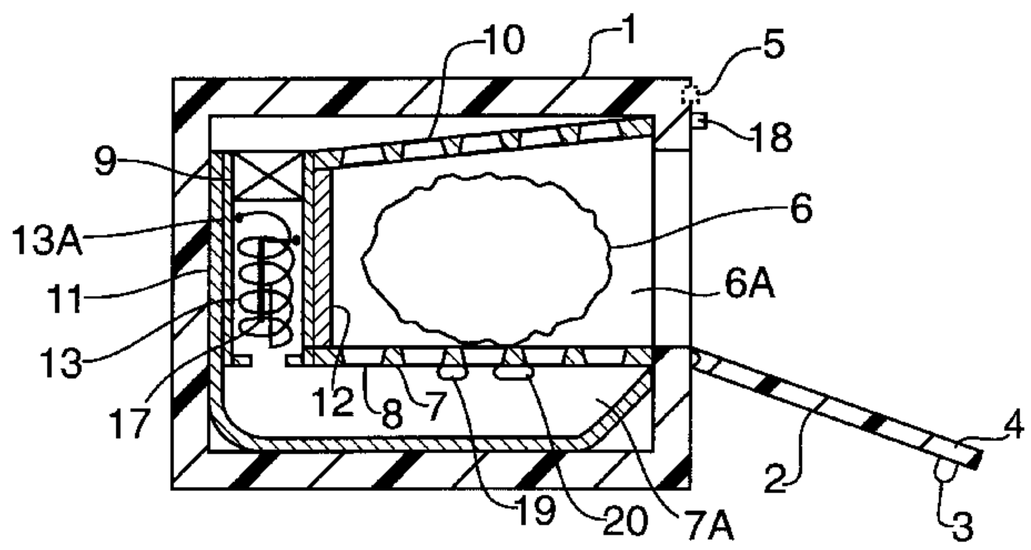
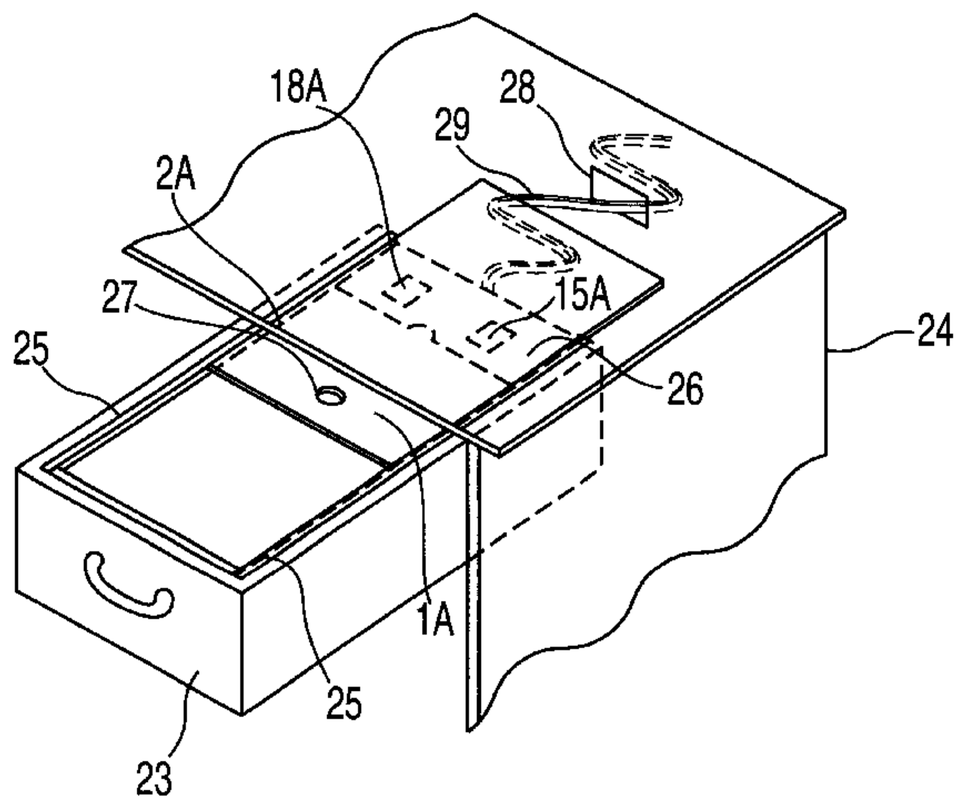
(74) *Attorney, Agent, or Firm*—Alfred C. Hill

(57) **ABSTRACT**

A hot air towel warmer comprising a substantially air tight enclosure having an access door to enable placing a towel to be warmed in the enclosure and to enable removing the warmed towel therefrom; a shelf disposed within the enclosure having perforations therethrough to support the towel; a blower disposed within the enclosure adjacent to the shelf to create a stream of air and to continuously circulate the stream of air within the enclosure for passage through the perforations of the shelf and the towel; a resistance coil heater disposed within the enclosure adjacent the blower to heat the stream of air; an electrical control circuit disposed within the enclosure associated with the stream of air, the blower and the heater to automatically maintain the stream of air at a temperature within a predetermined temperature range for a given period of time or until the access door is open, whichever comes first and to prevent scorching of the towel should a short circuit occur in the parts of the electrical control circuit; and various embodiments to permanently secure the hot air towel warmer to prevent the warmer from falling into either a tub or a shower enclosure.

11 Claims, 6 Drawing Sheets





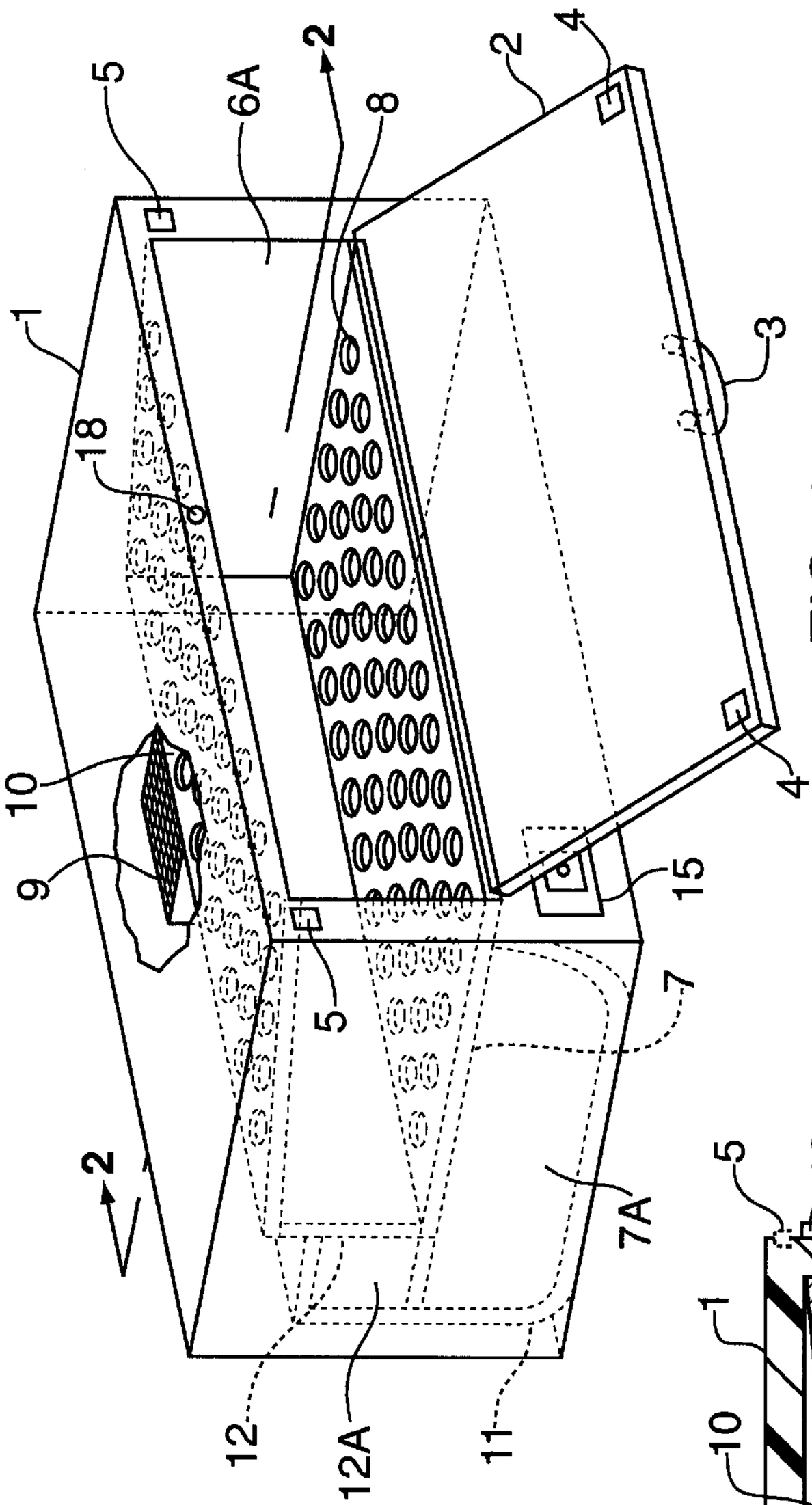

5
6A
2
8
2
4
1
18
3
10
9
15
5
7
2
12
12A
11
7A

FIG. 1

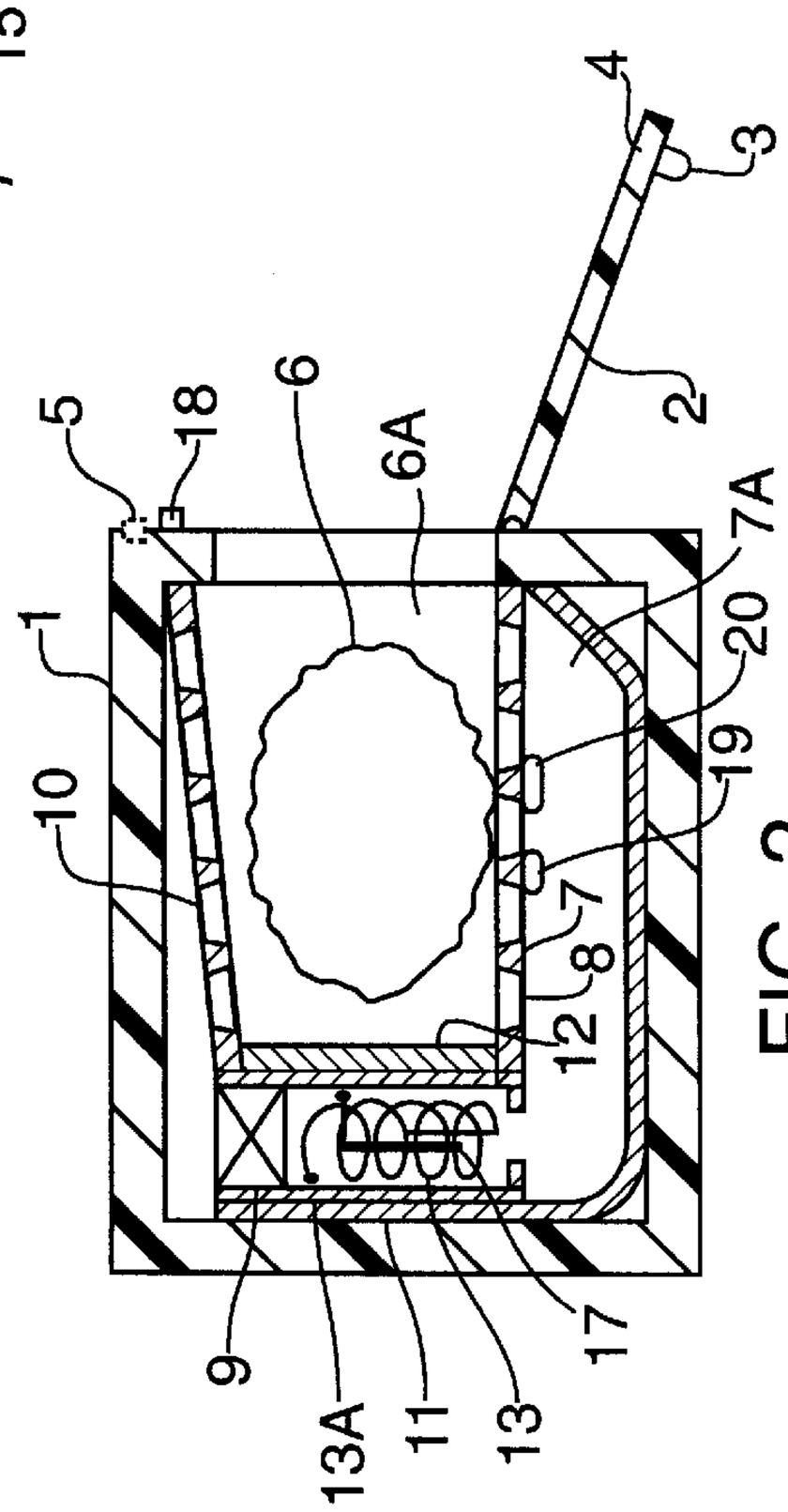

4
3
5
18
6
6A
2
7A
1
20
10
19
7
8
12
9
13A
11
13
17

FIG. 2

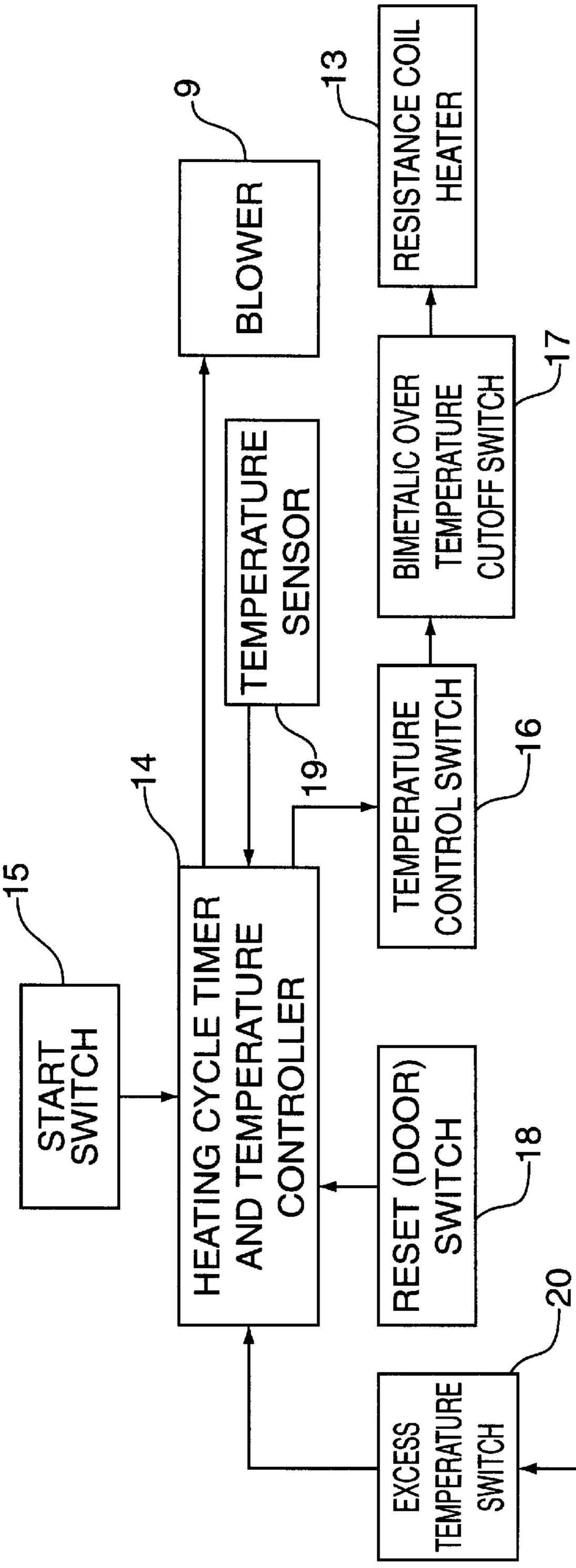

9
BLOWER
13
RESISTANCE COIL HEATER
TEMPERATURE SENSOR
BIMETALIC OVER TEMPERATURE CUTOFF SWITCH
17
14
19
TEMPERATURE CONTROL SWITCH
16
15
START SWITCH
HEATING CYCLE TIMER AND TEMPERATURE CONTROLLER
RESET (DOOR) SWITCH
18
20
EXCESS TEMPERATURE SWITCH
POWER IN 110V 60~ AC

FIG. 3

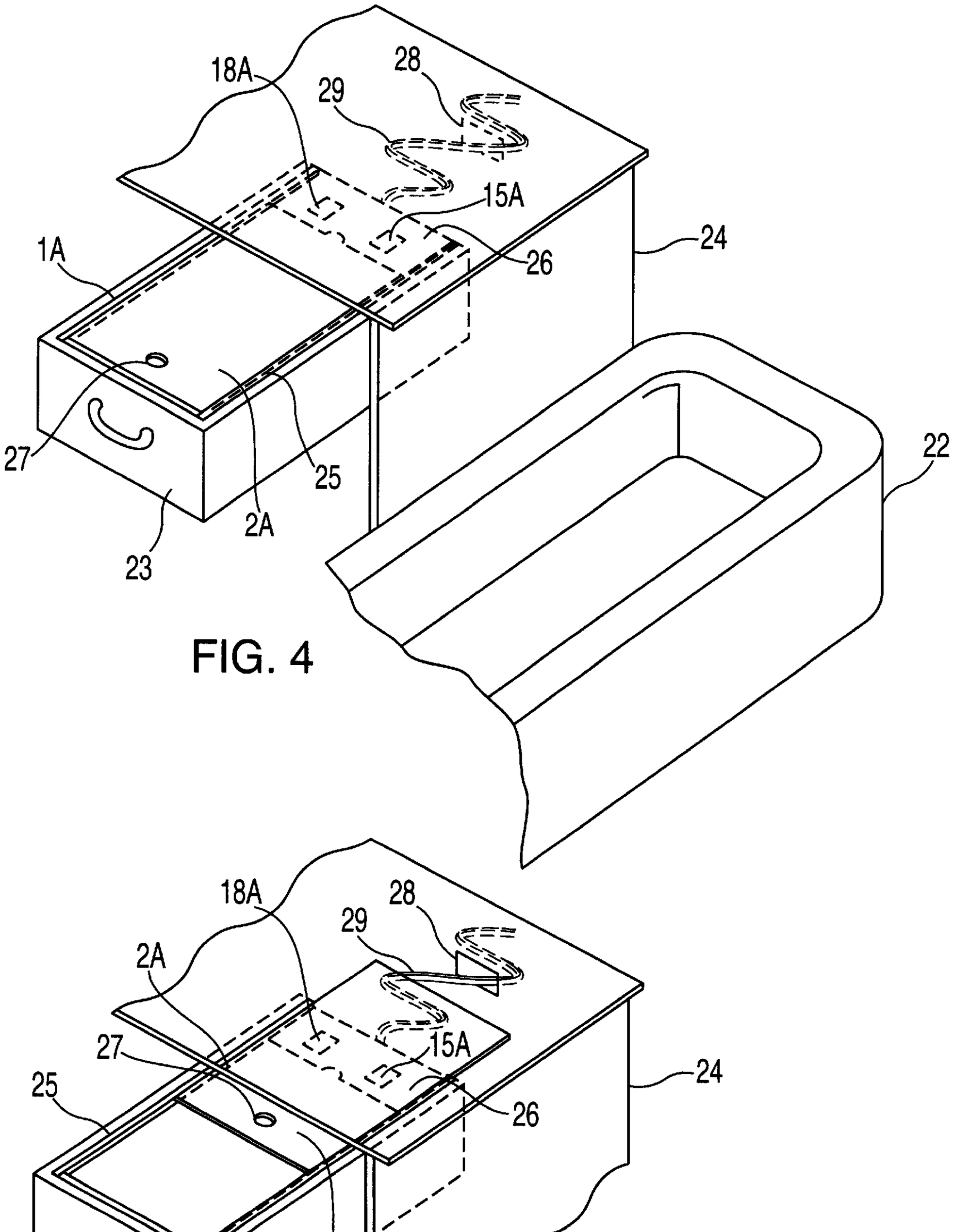

18A
28
29
15A
26
24
1A
27
25
2A
23
22

FIG. 4

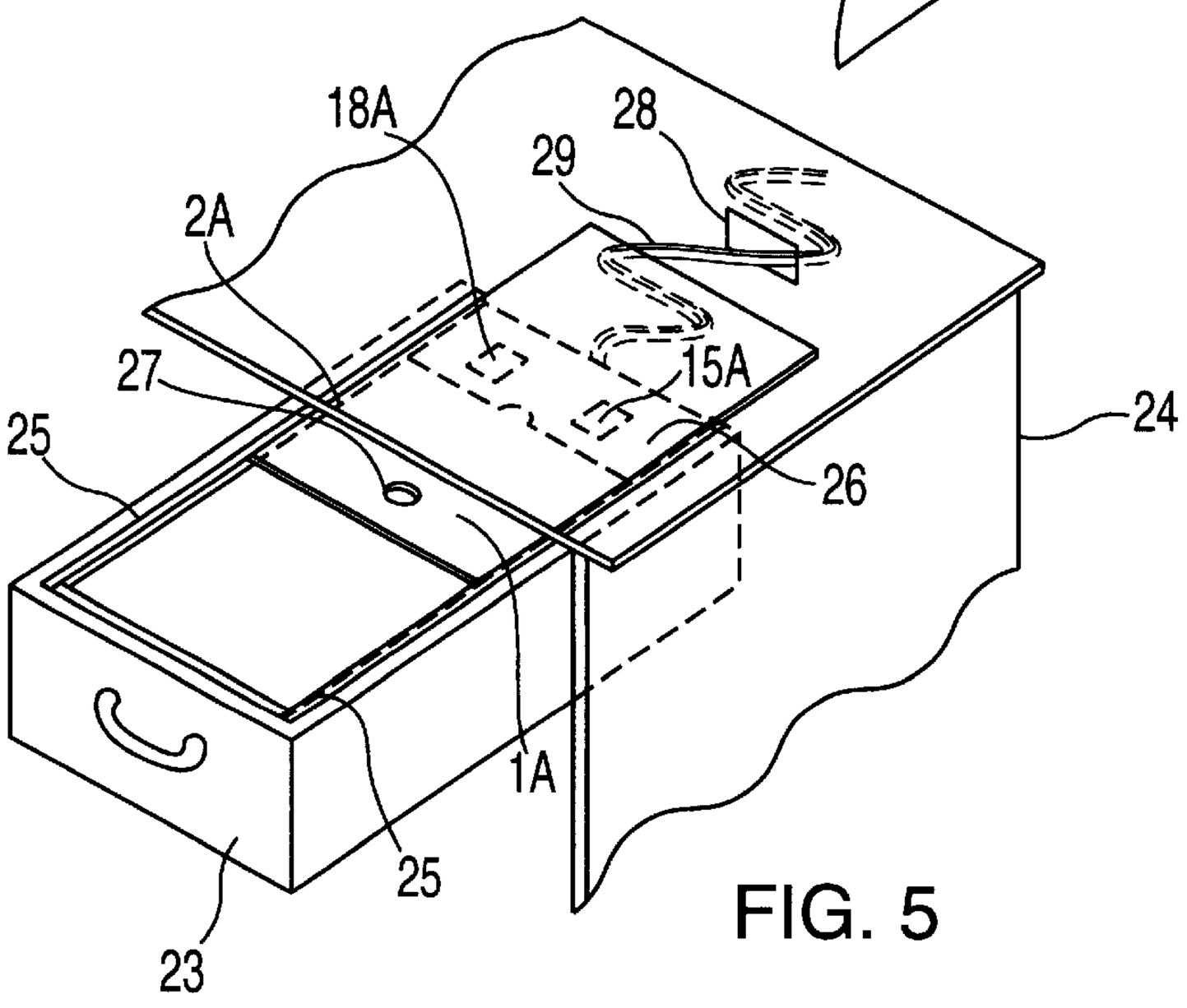

18A
28
29
2A
27
15A
25
26
24
1A
25
23

FIG. 5

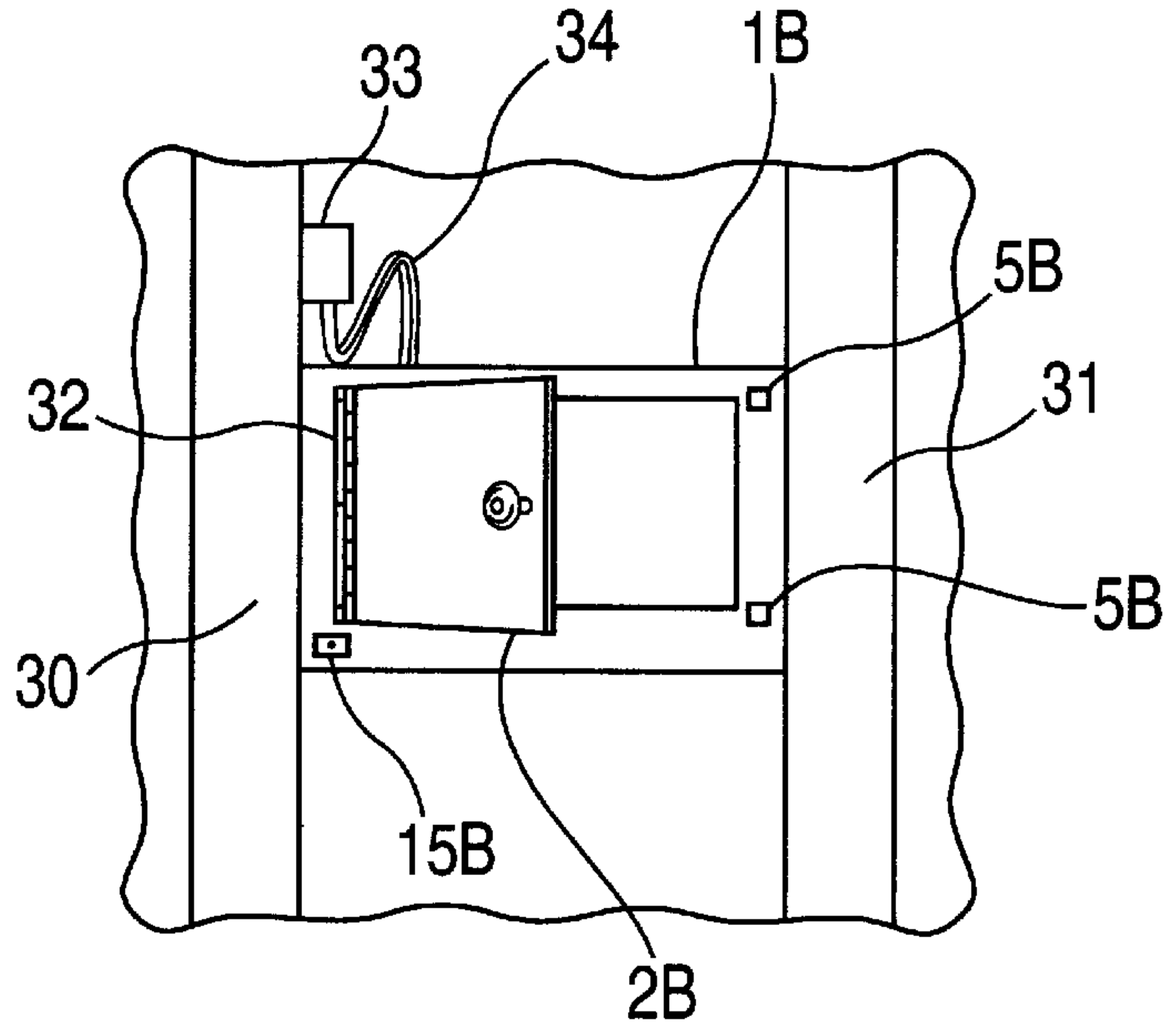


FIG. 6

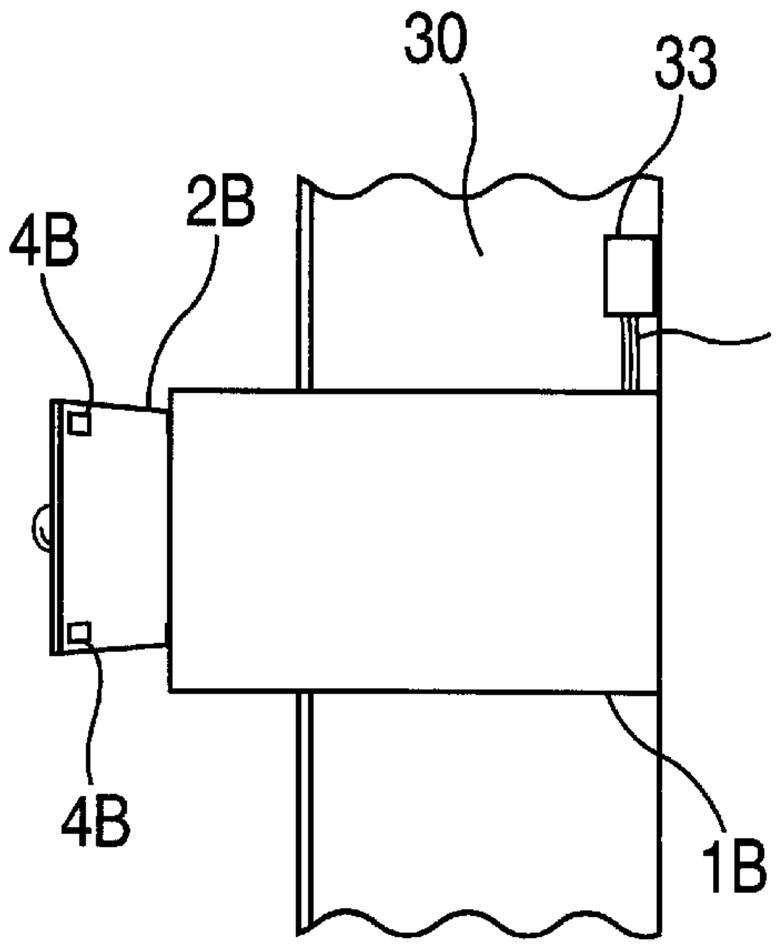


FIG. 7

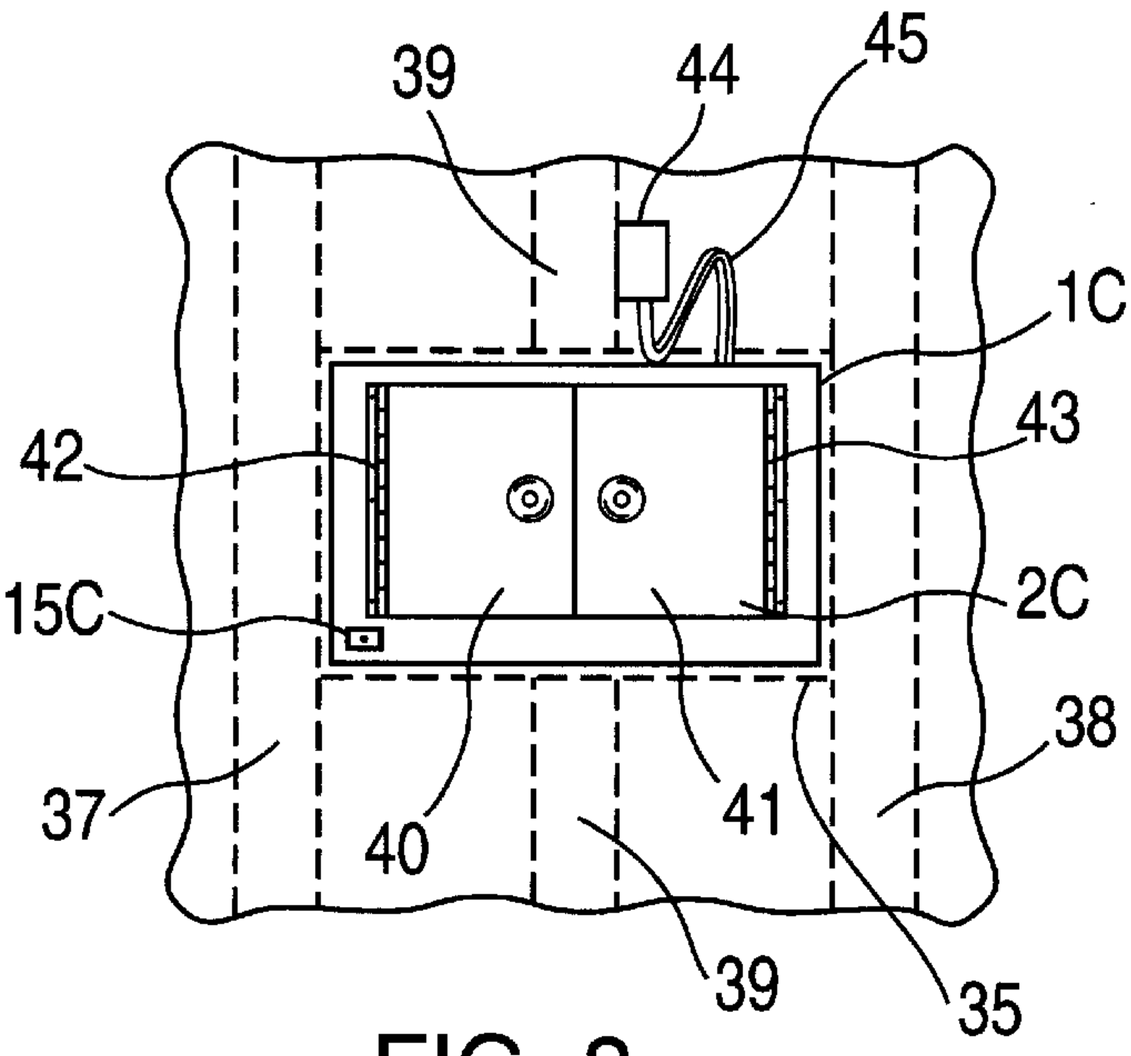


FIG. 8

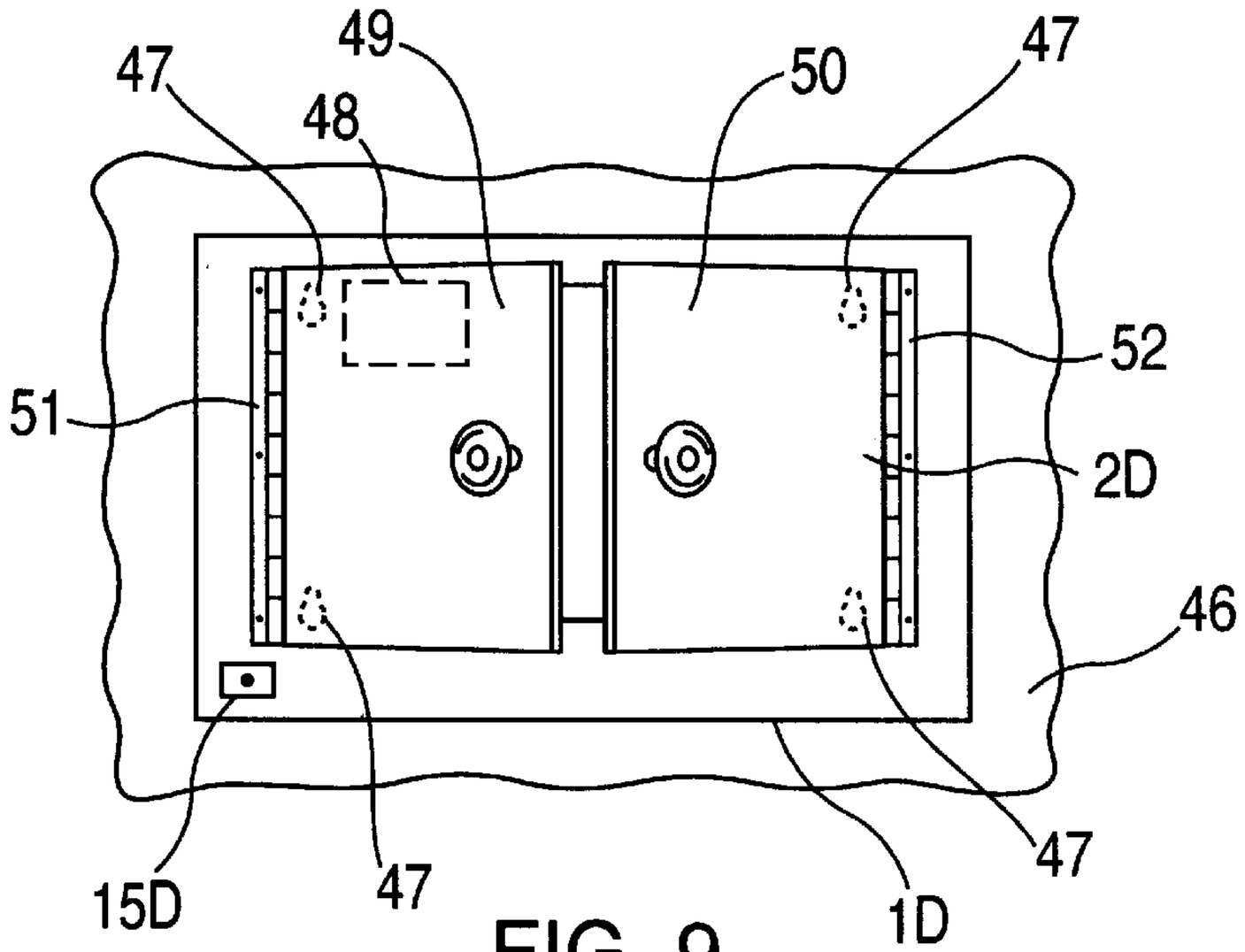


FIG. 9

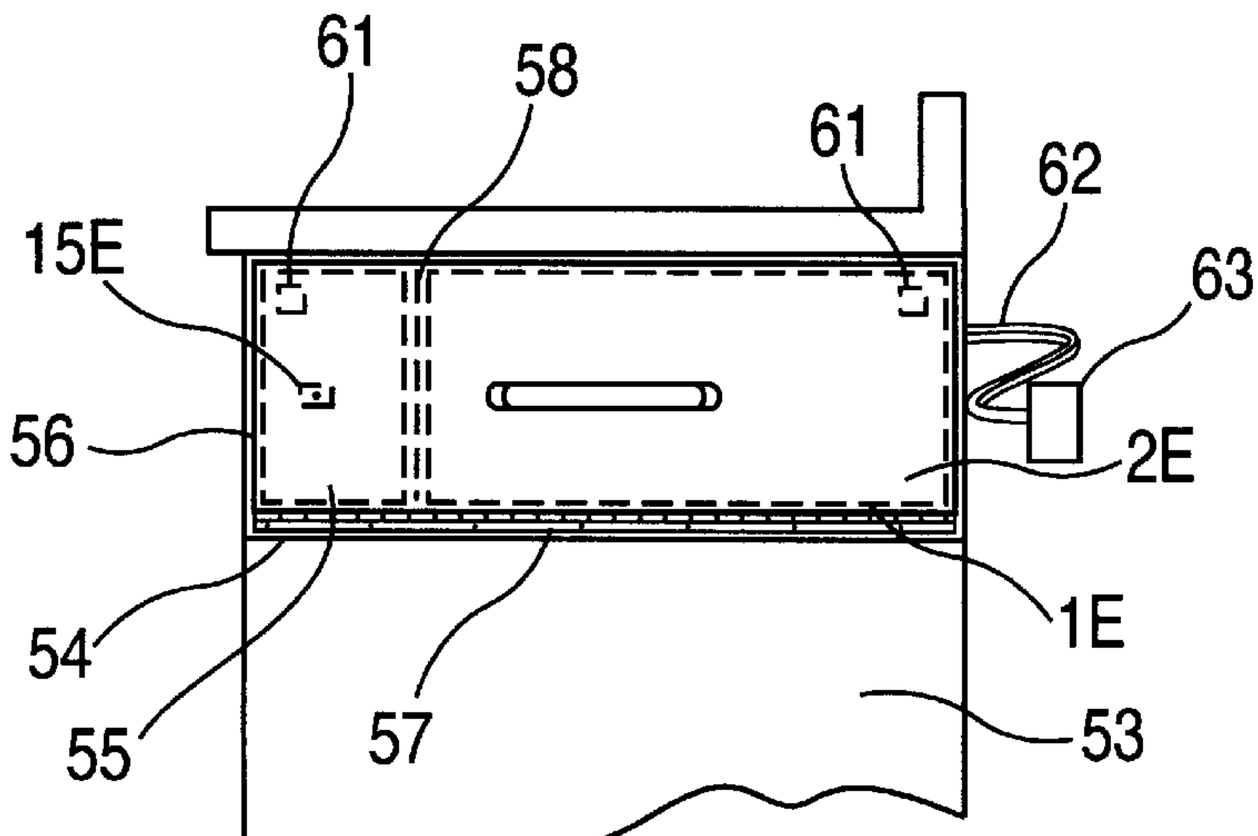


FIG. 10

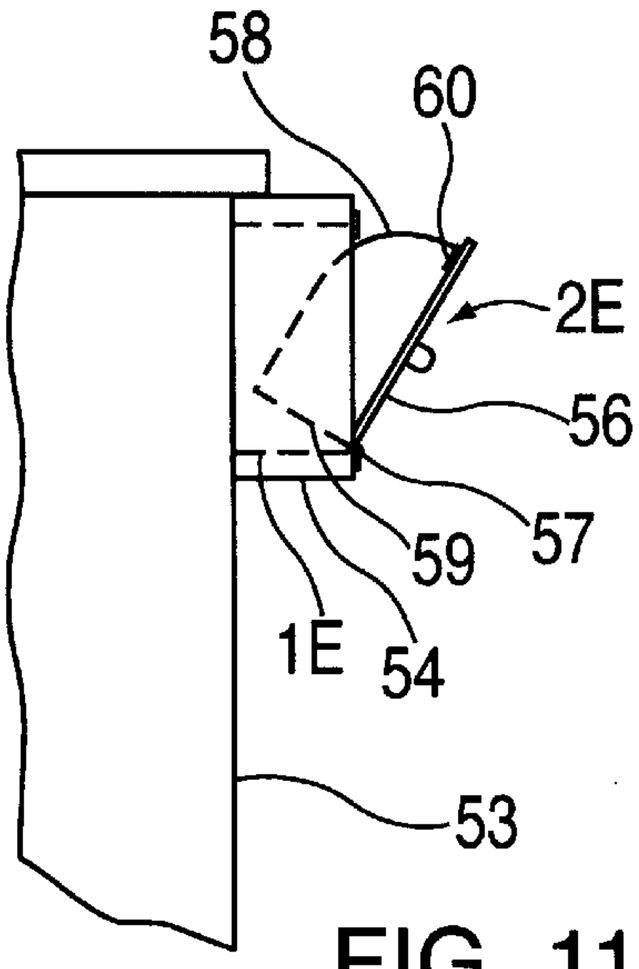


FIG. 11

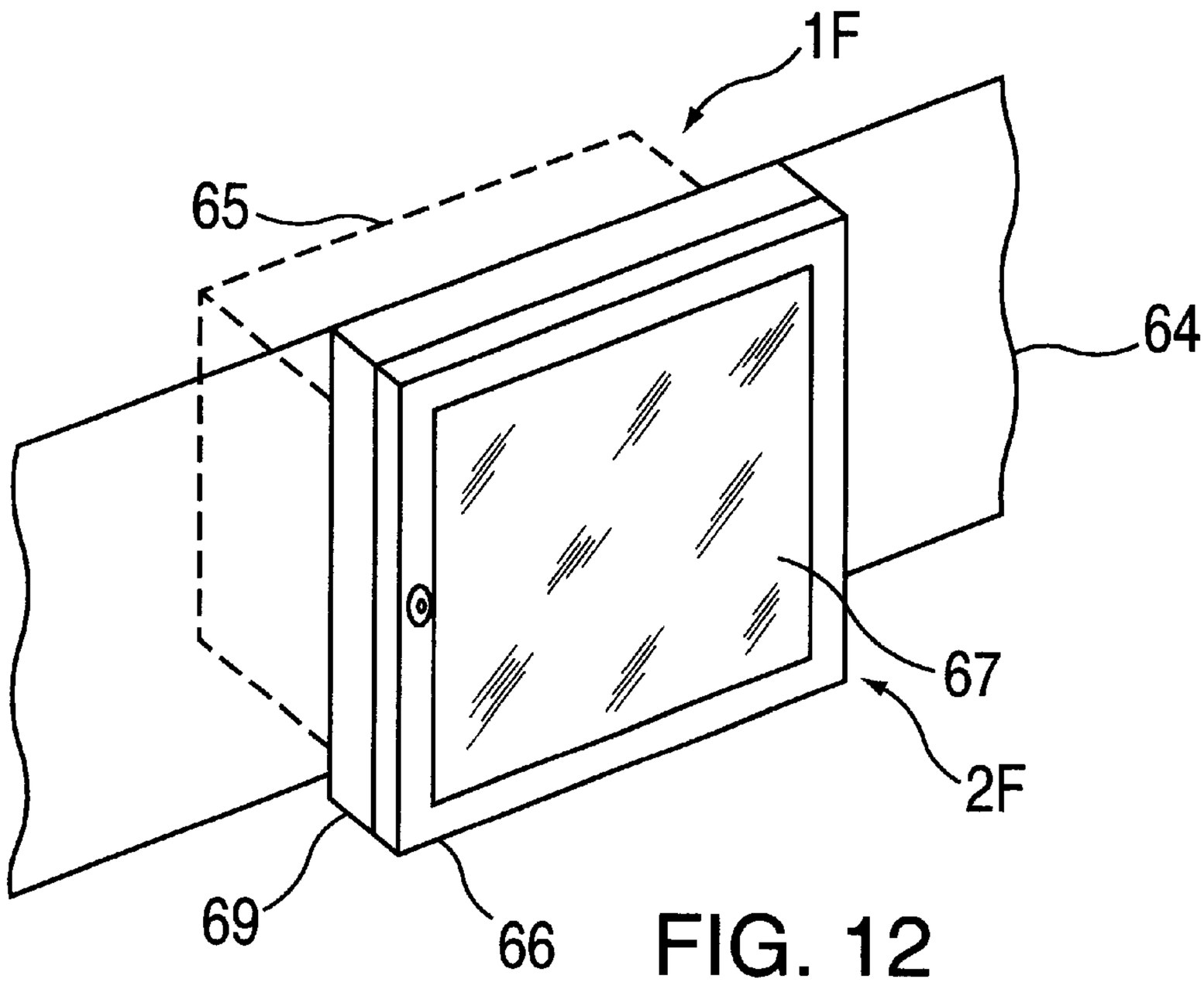


FIG. 12

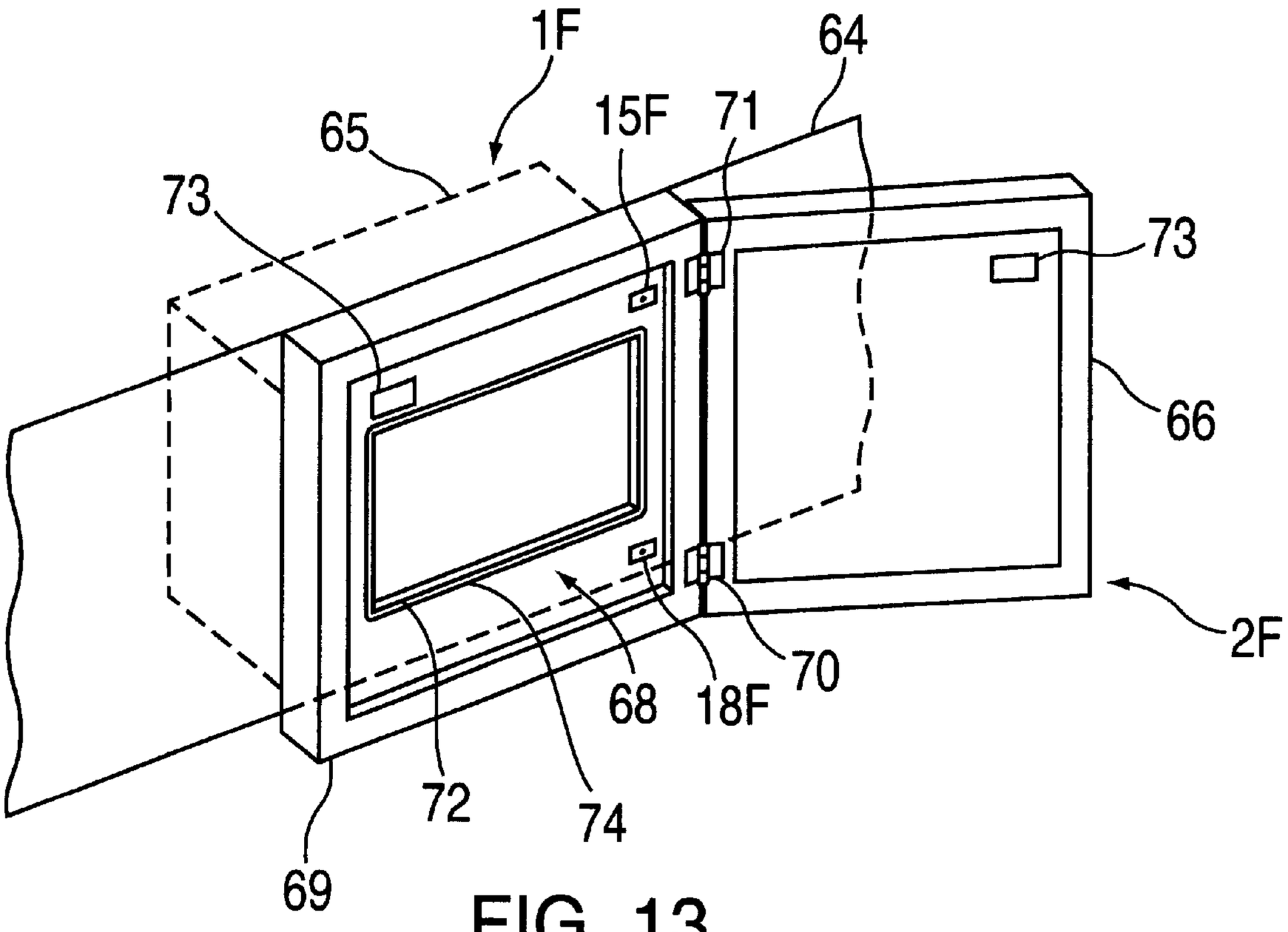


FIG. 13

TOWEL WARMER

BACKGROUND OF THE INVENTION

The present invention relates to a hot air towel warmer and more particularly to an improved hot air towel warmer.

As pointed out in U.S. Pat. No. 6,046,436, whose patentee is the same as the applicant of the present application, the feel of a uniformly warm towel against the skin immediately after a shower or a bath is a delight that is only rarely enjoyed. If enjoyed in ones home before the inception of the hot air towel warmer of U.S. Pat. No. 6,046,436, it was only because one has managed to complete a shower shortly after having run a load of towels through the washer and dryer.

Experience has shown that the pleasure of a warm towel against the skin is diminished as the distance from the tub or shower to the towel warmer increases. Therefore, to be commercially viable, a towel warmer must be aesthetically pleasing and space economical while simultaneously satisfying the uniform building code which disallows duplex outlets close to tubs or showers.

SUMMARY OF THE INVENTION

An object of the present invention is to provide a safe, permanently installed towel warmer which is more desirable and user friendly since it can be placed in close proximity to a tub or shower thereby satisfying the uniform building code requirements which disallow duplex electrical outlets in close proximity to tubs or showers as a precaution against electrocution when live portable electrical appliances are inappropriately used, or dropped into occupied tubs or showers containing standing water.

Permanently installed electrical devices, such as lights, area heaters and exhaust fans do not have the same proximity restrictions, since they cannot be physically displaced into the tub area, and it is an object of the present invention to satisfy the safety criteria by the same approach.

Another object of the present invention is to prevent the possibility of igniting the towel in the unlikely event of short circuit failure of the primary temperature sensor, or heater coil power sequencing switch.

A rarely occurring but recognized failure mode of triacs is an electrical short from anode to cathode. Similarly, relays have been known to fail by self fusing the contacts to create an electrical short circuit. Since either a triac or a relay is required to allow the control electronics to modulate power to the heating element and thereby control the temperature within the antechamber, the present invention provides a thermal circuit breaker, or a bimetallic temperature sensor/switch located within the antechamber, (thermal accumulator/supply plenum) with a switch temperature (approximately 300° F.) above the level maintained by the control electronics, but below the ignition temperature of cotton. This switch will in all likelihood never be activated during the entire lifetime of the towel warmer. Its sole purpose is to prevent towel ignition in the unlikely event of a short circuit failure of either the temperature control sensor, or power switch (triac or relay) which sequences the heater coil on and off to control air temperature.

The ultimate purpose of the disclosed towel warmer is to uniformly heat a towel to a predetermined end temperature within the short time duration of a typical shower (about 7 to 10 minutes) without any possibility of scorching the towel. To do so one must take advantage of the established thermodynamic principle which states that the rate of heat

transfer (dH) from a warmer to a cooler body is in direct proportion to the temperature difference (dT) between the bodies and in inverse proportion to the distance between the bodies (D), stated mathematically: dH=K (dT/D). The disclosed towel warmer is configured to control two simultaneous heat exchange interactions; one between the electric heating coil and the return ambient air passing through it, and the second between the heated air within the towel heating chamber and the cotton fibers within the towel.

A further object of the present invention is to maintain the greatest possible dynamic temperature differential and the smallest possible heat path (distance) in each of these exchange interactions in order to maximize the actual rate of heat flow between the heater element and the individual towel fibers and thereby to minimize the time required to heat the towel.

Still a further object of the present invention is to reduce the overall size (volume) of the entire towel warmer enclosure such that the unit can be inconspicuously installed in bathrooms so designers, or remodeling contractors, can complete installation without impacting either the room esthetics, or the available counter space.

A feature of the present invention is the provision of a hot air towel warmer comprising a substantially air tight enclosure having a sealable access means to enable placing a towel and the like to be warmed in the substantially air tight enclosure and to enable removing a warmed towel therefrom; first means disposed within the substantially air tight enclosure having air passages therethrough to support the towel; second means disposed within the substantially air tight enclosure adjacent the first means to create a stream of air and to continuously circulate the stream of air within the substantially air tight enclosure for passage through the first means and the towel; third means disposed within the substantially air tight enclosure adjacent the second means to heat the stream of air; fourth means disposed within the substantially air tight enclosure associated with the stream of air, the second means and the third means to automatically maintain the stream of air at a temperature within a predetermined temperature range for a given period of time; and fifth means disposed within the substantially air tight enclosure associated with the stream of air, the third means and the fourth means to detect a short circuit in either one of the third means and the fourth means to prevent towel ignition in the unlikely event of such a short circuit.

Another feature of the present invention is the provision of a hot air towel warmer comprising a substantially air tight enclosure having a sealable access means to enable placing a towel and the like to be warmed in the substantially air tight enclosure and to enable removing a warmed towel therefrom; first means disposed within the substantially air tight enclosure having air passages therethrough to support the towel; second means disposed within the substantially air tight enclosure adjacent the first means to create a stream of air and to continuously circulate the stream of air within the substantially air tight enclosure for passage through the first means and the towel; third means disposed within the substantially air tight enclosure adjacent the second means to heat the stream of air; fourth means disposed within the substantially air tight enclosure associated with the stream of air, the second means and the third means to automatically maintain the stream of air at a temperature within a predetermined temperature range for a given period of time; and fifth means associated with the substantially air tight enclosure to enable permanent installation of the hot air towel warmer within a bathroom in close proximity to a selected one of a tub and a shower such that the hot air towel warmer is incapable of being displaced into a selected one of a tub and a shower.

BRIEF DESCRIPTION OF THE DRAWING

Above-mentioned and other features and objects of the present invention will become more apparent by reference to the following description taken in conjunction with the accompanying drawing, in which:

FIG. **1** is a perspective view of the hot air towel warmer in accordance with the principles of the present invention;

FIG. **2** is a cross-sectional view of the hot air towel warmer taken along line **2**—**2** at FIG. **1**;

FIG. **3** is a block diagram of the electrical control system of the hot air towel warmer in accordance with the principles of the present invention;

FIG. **4** is a perspective view of a first embodiment for placing the hot air towel warmer within a drawer of an existing or planned vanity within close proximity to a tub or a shower with the access door closed in accordance with the principles of the present invention;

FIG. **5** is a perspective view of the first embodiment of the hot air towel warmer with the access door open in accordance with the principles of the present invention;

FIG. **6** is a front view of a second embodiment for permanently securing the hot air towel warmer in a bathroom embedded within the wall between adjacent studs in accordance with the principles of the present invention;

FIG. **7** is a side view of the second embodiment of FIG. **6**;

FIG. **8** is a front view of a third embodiment for permanently securing the hot air towel warmer in a bathroom embedded within the wall between two studs separated by at least one other stud in accordance with the principles of the present invention;

FIG. **9** is a front view of a fourth embodiment of the hot air towel warmer contained within a cabinet secured to the wall of a bathroom in accordance with the principles of the present invention;

FIG. **10** is a front view of a fifth embodiment for permanently securing the hot air towel warmer in a bathroom fastened to an end wall of a vanity in accordance with the principles of the present invention;

FIG. **11** is a side view of the hot air towel warmer of FIG. **10**;

FIG. **12** is a perspective view of a sixth embodiment for permanently securing the hot air towel warmer in a bathroom contained in a cabinet embedded in a wall of a bathroom with the door closed in accordance with the principles of the present invention; and

FIG. **13** is a perspective view of FIG. **12** with the door open in accordance with the principles of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. **1** and **2**, the hot air towel warmer in accordance with the principles of the present invention includes a substantially air tight enclosure **1** having a sealable access means in the form of a door **2** which is moveable into a closed position by handle **3** and held in a closed position by a magnet or similar catches **4** and **5**. Door **2** enables placing a towel **6** to be warmed in the enclosure **1** and to enable removing the warm towel **6** from enclosure **1**. As illustrated at FIG. **2**, the towel **6** is in a rumpled condition, but it could just as well be in a neatly folded condition, since regardless of the condition of towel **6**, the towel **6** is completely warmed throughout its bulk by means of total immersion in the temperature controlled forced hot air being circulated within enclosure **1**.

A first means in the form a shelf **7** having air passages therethrough in a form of perforations **8** is disposed within the air tight enclosure **1** to support the towel **6**.

A second means in the form of a blower **9** adjacent the rear of enclosure **1** creates a stream of air and continuously circulates the stream of air within the enclosure **1** for passage through the shelf **7** and the towel **6** being returned to blower **9** through the perforated baffle **10**. Baffles **11** and **12** are provided to ensure that the air stream is directed through the towel **6**, the shelf **7** and the baffle **10**. The perforated baffle **10** is provided to ensure that the towel **6** is not sucked into the return of blower **9** and to maintain the towel **6** within the space defined by the shelf **7** and the perforated baffle **10**. Baffles **7** and **11** further define a temperature controlled antechamber **7**A separating the heating coil chamber **13**A and the towel warmer chamber **6**A.

A third means in the form of a resistance coil heater **13** is disposed in chamber **13**A of enclosure **1** adjacent the blower **9** to heat the air stream and, hence, the towel **6**. Space **12**A provides sufficient volume to contain control electronic circuitry of FIG. **3**. The spaces **12**A and **13**A are separate internal spaces to thermally insulate the control electronics from heater coil **13**.

The operation of the hot air towel warmer, in accordance with the principle of the present invention, is controlled by an electrical circuit, shown in block diagram form in FIG. **3** which together with temperature sensor **19**, placed within the antechamber plenum **7**A defined by baffles **7** and **11** constitutes the fourth means of the device to automatically maintain the stream of air at a temperature within a predetermined temperature range for a given period of time.

Referring to FIG. **3**, the main control to establish the predetermined time and temperature range is provided by the heating cycle timer and temperature controller **14** which includes therein electrical circuitry to provide a predetermined period of time for the heating cycle and the predetermined temperature range for the stream of air within antechamber **7**A. Controller **14** couples the power for operation of blower **9** and the resistance coil heater **13** for a predetermined period of time established by any known timer circuit and an electrical circuit that establishes the range of temperature within which it is desired to maintain the stream of air to accomplish the heating of towel **6**. The heating cycle is started by the start switch **15** which may be placed in any convenient position on the enclosure **1**, one of which is shown in FIG. **1**. The controller **14** couples the power to blower **9** throughout the predetermined period of time with the power to heater **13** being interrupted by the temperature control switch **16** and/or the bimetallic over-temperature cut off switch **17**, only temperature control switch **16** being under direct control of and subject to interruption by temperature controller **14**. A temperature sensor **19** is located in the path of the stream of air where it first encounters the towel such that it measures the hottest temperature applied to the towel. By this means, a temperature high enough to achieve rapid heat transfer to the towel can be maintained within antechamber **7**A without any danger of scorching the towel as illustrated at **19** in FIG. **2**. The cut off switch **17** illustrated in FIG. **2** will cut off the power to the heater **13** if the blower fan ceases to function for any reason, thus preventing overheating of the heater coil **13** which is dependent on the forced air flow for its, cooling. The operating cycle will be interrupted and reset by the contact switch **18** when door **2** is open. When door **2** is

opened switch **18** resets the controller **14** which is then ready for another cycle of operation to warm another towel, or the same towel, when starter switch **15** is operated. An excess temperature switch **20** is provided beneath shelf **7** as illustrated in FIG. **2** to protect the towel from scorching should a short occur in the electronic system as previously mentioned. If the excess temperature switch **20** senses a high temperature indicating a short circuit it will cut all power to the hot air towel warmer **1**.

The control arrangement as shown in FIG. **3** is such that controller **14** will always supply power to blower **13** during a predetermined period of time as well as the power to the resistance coil **13** which will be interrupted by the temperature control switch **16** when the temperature of the air stream reaches the maximum desired level, and power will then be restored when the air temperature drops approximately 5° F. to its lower desired level, thus establishing a predetermined temperature range. The cut off switch **17** interrupts the power to heater **13** if the air stream is interrupted to prevent overheating of the heating coil **13**.

The given time period provided in controller **14** is selected to be longer than the time consumed by a normal shower or bath so that the warm towel will be available to the occupant of the shower or bath when the shower or bath is completed, but the unit will shut off automatically should the individual fail to open the access door **2** for any reason. Temperature sensor **19** and control switch **16** and the excess temperature switch **20** can be provided by a bimetallic switch. This would be the simplest embodiment of sensor **19**, switch **16** and switch **20**, would be inexpensive and would combine temperature sensing and control switch in a single unit. A disadvantage might be the ability of the bimetallic switch **16** to maintain a 5° F. deadband from about 210° F. to 215° F. and to operate "hot" for many cycles of use during its lifetime. The preferred embodiment of sensor **19** and control switch **16** is by means of a thermistor, level detecting amplifier and triac solid state switch. In this embodiment the triac control switch **16** is co-located with the temperature control electronic **14**. This arrangement essentially has an infinite "hot" switch lifetime and solid state reliability although at a higher cost than the bimetallic switch arrangement.

Referring to FIGS. **4** and **5**, there is illustrated therein one of the embodiment to enable permanent installation of the hot air towel warmer of FIGS. **1** and **2** within a bathroom to prevent the hot air towel warmer from falling into a selected one of a tub and shower shown in FIG. **4** to be tub **22**. The enclosure **1**A of the hot air towel warmer is dimensioned to fit within a drawer **23** of a vanity **24** adjacent tub **22**. The access means **2**A of FIG. **4** is on the top of the enclosure **1**A. The start switch **15** and door open switch **18** are embedded within the drawer insert unit or enclosure **1**A and actuated by position detection switches **15**A and **18**A, respectively, as access means **2**A or top slides to the rear, as shown in FIG. **5**, and back. Switches **15**A and **18**A are both "transparent" to the user by means of the controller logic. Access means **2**A slides on tracks **25** and between tracks **25** and member **26** by means of finger moving means **27**. Power is supplied to the towel warmer by hardwiring from receptacle **28** to the control circuitry of the towel warmer by a power cord **29** which will expand when the drawer **23** is pulled out and which will retract when the drawer **23** is closed. Power cord **26** is a swing arm power cord, a single loop of which equals two times drawer **23** width, or drawer **23** pull.

In the embodiment shown in FIGS. **6** and **7**, the towel warmer of FIGS. **1** and **2** is disposed between two studs **30** and **31**. In this embodiment the enclosure **1**B is secured to the studs **30** and **31** to hold it in position and the sealable access means **2**B is provided with a piano hinge **32** that is hinged to the front surface adjacent and parallel to one of the two sides the air tight enclosure **1**B. The magnetic catches **5**B cooperate with the magnetic catches **4**B on the access means **2**B to sealably close the substantially air tight enclosure **1**B. Power is provided to the enclosure **1**B by hardwiring from electrical box **33** with the conductor **34**.

Referring to FIG. **8**, there is illustrated therein another embodiment for permanently securing the towel warmer in accordance with the principles of the present invention which is capable of warming oversize, or "towel sheets" as they are commonly known. The enclosure **1**C is secured in a cavity **35** disposed in a wall **36** between two spaced studs **37** and **38** separated by at least one stud **39** that is removed between the two spaced studs **37** and **38**. The access means **2**C in this embodiment is provided by two sealable doors **40** and **41** hinged to the front surface of the enclosure **1**C by the piano hinges **42** and **43**. The start button **15**C is provided in the front surface of the enclosure **1**C and the power is provided to the enclosure **1**C by an electrical box **44** which is hardwired to the enclosure **1**C by the wire **45**.

The access means **2**C for the enclosure **1**C could be provided by a single door in the front surface of the enclosure **1**C hinged at the bottom or top of this single door to provide access for inserting a towel to be warmed and for removing a warmed towel.

Referring to FIG. **9**, there is illustrated another embodiment of permanently securing the towel warmer to a bathroom wall **46** by providing in the enclosure **1**D key holes **47**. A receptacle **48** is also provided to hardwire the enclosure **1**D to the electrical system of the bathroom. The start switch **15**D is contained on the front surface of enclosure **1**D. The access means **2**D is provided by two doors **49** and **50** which are hinged to the front surface of enclosure **1**D by the piano hinges **51** and **52** disposed adjacent and parallel to the two sides of the air tight enclosure **1**D.

It should be recognized that the access means **2**D could be provided as illustrated in FIG. **1** which includes only one door hinged onto the front surface adjacent and parallel to the bottom of the enclosure **1**D.

Referring to FIGS. **10** and **11**, there is illustrated another embodiment permanently securing the enclosure **1**E of the towel warmer of FIGS. **1** and **2** in accordance with the principles of the present invention. In the embodiment shown in FIGS. **10** and **11**, the enclosure **1**E is secured to a sidewall of a vanity **53** adjacent a selected one of a tub and a shower. Enclosure **1**E is contained in container **54** which provides a compartment **55** for the electronic control circuitry. The various chambers of the hot air towel warmer of FIGS. **1** and **2** are contained in the rest of container **54**. Access means **2**E is provided by a member **56** rotatable on piano hinge **57** as illustrated in FIG. **11** to enable insertion of a towel to be warmed and removal of a warmed towel from the hot air towel warmer of FIGS. **1** and **2**. Rotatable member **56** is enclosed on all five sides to prevent the towel from being lodged behind or under member **56**. Perforated member **59** corresponds to shelf **7** of FIGS. **1** and **2**. As in FIGS. **1** and **2** member **59** holds the towel to be warmed, placed therein through opening **58** upon closing member **56** and to enable removal of the towel for use through opening **58** when member **56** is opened. Member **56** is held in its closed position by magnets **60** mating with the other half **61** of a magnetic catch. Power to enclosure **1**E is provided by conductor **62** hardwired to electrical box **63** disposed in the wall of the bathroom.

Referring to FIGS. **12** and **13**, there is illustrated another embodiment permanently securing enclosure **1**F of the towel warmer of FIGS. **1** and **2** mounted on and within wall **64**. The major part **65** of enclosure **1**F is embedded in wall **64** with the access means **2**F including a door **66** containing on an outer surface thereof a mirror **67**. Access means **2**F includes a member **68** contained in a box **69** to which door **66** is hinged by hinges **70** and **71**. Member **68** contains thereon an opening **72** through which a towel to be warmed is inserted and from which the warmed towel is removed. During the towel warming process door **66** is hold in a closed position by magnetic catch **73**. Opening **72** has a sealing material **74** therearound to ensure a seal for the access means **2**F.

While I have described above the principles of my invention in connection with specific apparatus, it is to be clearly understood that this description is made only by way of example and not as a limitation to the scope of my invention as set forth in the objects thereof and in the accompanying claims.

I claim:

1. A hot air towel warmer comprising:

a substantially air tight enclosure having-a sealable access means to enable placing a towel and the like to get warmed in said substantially air tight enclosure and to enable removing a warmer towel therefrom;

first means disposed within said substantially air tight enclosure having air passages therethrough to support said towel;

second means disposed within said substantially air tight enclosure adjacent-said first means to create a stream of air and to continuously circulate said stream of air within said substantially air tight enclosure for passage through said first means and said towel;

third means disposed within said substantially air tight enclosure adjacent said second means to heat said stream of air;

fourth means disposed within said substantially air tight enclosure associated with said stream of air, said second means and said third means to automatically maintain said stream of air at a temperature within a predetermined temperature range for a given period of time;

fifth means disposed within said substantially air tight enclosure associated with said stream of air, said third means and said fourth means to detect a short circuit in either one of said third means and said fourth means due to a malfunction in either one of said third means and said fourth means to prevent towel ignition in the unlikely event of such a short circuit; and

sixth means associated with said substantially air tight enclosure to enable permanent installation of said hot air towel warmer within a bathroom to prevent said hot air towel warmer from falling into a selected one of a tub and a shower;

said sixth means including

a vanity drawer adjacent said selected one of a tub and a shower,

said substantially air tight enclosure being disposed in said vanity drawer,

said sealable access means is slidably disposed in a top of said substantially air tight enclosure,

an electrical power source disposed behind said vanity drawer, and

a flexible connection between said electrical power source and said third means and said fourth means of said substantially air tight enclosure.

2. A towel warmer according to claim **1**, further including

switch means associated with said second means, said third means, said fourth means and said sealable access means responsive to the position of said sealable access means to turn said hot air towel warmer ON and OFF.

3. A hot air towel warmer comprising:

a substantially air tight enclosure having a sealable access means to enable placing a towel and the like to get warmed in said substantially air tight enclosure and to enable removing a warmed towel therefrom;

first means disposed within said substantially air tight enclosure having air passages therethrough to support said towel;

second means disposed within said substantially air tight enclosure adjacent said first means to create a stream of air and to continuously circulate said stream of air within said substantially air tight enclosure for passage through said first means and said towel;

third means disposed within said substantially air tight enclosure adjacent said second means to heat said stream of air;

fourth means disposed within said substantially air tight enclosure associated with said stream of air, said second means and said third means to automatically maintain said stream of air at a temperature within a predetermined temperature range for a given period of time; and

fifth means associated with said substantially air tight enclosure to enable permanent installation of said hot air towel warmer within a bathroom in close proximity to a selected one of a tub and a shower such that said hot air towel warmer is incapable of being displaced into said selected one of a tub and a shower;

said fifth means includes

a vanity drawer adjacent said selected one of a tub and a shower,

said substantially air tight enclosure disposed in said vanity drawer,

said sealable access means slidably disposed in a top of said substantially air tight enclosure,

an electrical power source disposed behind said vanity drawer, and

a flexible connection between said electrical power source and said third means and said fourth means of said substantially air tight enclosure.

4. A towel warmer according to claim **3**, further including

switch means associated with said second means, said third means, said fourth means and said sealable access means responsive to the position of said sealable access means to turn said hot air towel warmer ON and Off.

5. A hot air towel warmer comprising;

a substantially air tight enclosure having a sealable access means to enable placing a towel and the like to get warmed in said substantially air tight enclosure and to enable removing a warmed towel therefrom;

first means disposed within said substantially air tight enclosure having air passages therethrough to support said towel;

second means disposed within said substantially air tight enclosure adjacent said first means to create a stream of air and to continuously circulate said stream of air within said substantially air tight enclosure for passage through said first means and said towel;

third means disposed within said substantially air tight enclosure adjacent said second means to heat said stream of air;

fourth means disposed within said substantially air tight enclosure associated with said stream of air, said second means and said third means to automatically maintain said stream of air at a temperature within a predetermined temperature range for a given period of time;

fifth means associated with said substantially air tight enclosure to enable permanent installation of said hot air towel warmer within a bathroom in close proximity to a selected one of a tub and a shower such that said hot air towel warmer is incapable of being displaced into said selected on of a tub and a shower; and

switch means associated with said second means, said third means said fourth means and said sealable access means responsive to the position of said sealable access means to turn said hot air towel warmer ON and OFF.

6. A towel warmer according to claim **5**, wherein

said fifth means includes

a vanity drawer adjacent said selected one of a tub and a shower,

said substantially air tight enclosure disposed in said vanity drawer,

said sealable access means is slidably dispoased in said top of said substantially air tight enclosure,

an electrical power source disposed behing said vanity drawer, and

a flexible connection between said electricl power source and said third means and said fourth means of said substantially air tight enclosure.

7. A towel warmer according to claim **5**, wherein

said fifth means includes

a cavity disposed in a wall of said bathroom between adjacent studs of said wall, said cavity being disposed adjacent said selected one of a tub and a shower to permanently receive said substantially air tight enclosure therein,

said sealable access means is disposed in an exposed front surface of said substantially air tight enclosure, and

an electrical power source disposed in said cavity connected to said third means and said fourth means of said substantially air tight enclosure.

8. A towel warmer according to claim **5**, wherein

said fifth means includes

a cavity disposed in a wall of said bathroom between two spaced studs of said wall separated by at least one stud of said wall that is removed between said two spaced studs, said cavity being disposed adjacent said selected one of a tub and a shower to permanently receive an oversized version of said substantially air tight enclosure therein,

said sealable access means is disposed in an exposed front of said oversized version of said substantially air tight enclosure, and

an electrical power source disposed in said cavity connected to said third means and said fourth means of said oversized version of said substantially air tight enclosure.

9. A towel warmer according to claim **5**, wherein

said fifth means includes

a sixth means disposed in a back of said substantially air tight enclosure to enable mounting said substantially air tight enclosure on a wall of said bathroom, said sealable access means being disposed in a front surface of said substantially air tight enclosure, and

an electrical power source disposed in said wall of said bathroom adjacent and passed through said back of said substantially air tight enclosure connected to said third means and said fourth means of said substantially air tight enclosure.

10. A towel warmer according to claim **5**, wherein

said fifth means includes

a wall mounted cabinet permanently secured to a wall of said bathroom to permanently receive said substantially air tight enclosure within said wall mounted cabinet and partially embedded in said wall of said bathroom,

said sealable access means being disposed in an exposed surface of said substantially air tight enclosure, and

an electrical power source disposed in said wall behind said wall mounted cabinet connected through a back of said wall mounted cabinet and a back of said substantially air tight enclosure to said third means and said fourth means of said substantially air tight enclosure.

11. A towel warmer according to claim **5**, wherein

said fifth means includes

a cabinet secured to a sidewall of a vanity adjacent said selected one of a tub and a shower containing said substantially air tight enclosure,

said sealable access means includes a rotating cavity having a closed front, back and sides, an open top and a perforated bottom providing said first means, and

an electrical power source disposed in a wall of said bathroom adjacent said side wall of said vanity hard wired to said third means and said fourth means of said substantially air tight enclosure.

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